

TMH/nf 12/12/05 462099.doc 81601-16  
PATENT

Attorney Reference Number 4810-56910-01  
Application Number 09/733,507

### Listing of Claims

*This listing of claims replaces all prior versions and listings of claims in the application:*

1. (currently amended) A method of modifying development of a plant comprising transforming a plant cell with a nucleic acid encoding a plant cyclin-dependent kinase inhibitor polypeptide to produce a transformed plant cell, wherein the nucleic acid comprises the nucleic acid sequence set forth in SEQ ID NO: 1, SEQ ID NO: 3, or a nucleic acid sequence having at least 95% sequence identity with the nucleic acid sequence set forth in SEQ ID NO: 1 or SEQ ID NO: 3; and,  
growing the transformed plant cell or progeny of the transformed plant cell to produce a transformed plant under conditions wherein the plant cyclin-dependent kinase inhibitor polypeptide is expressed in a proliferative tissue of the transformed plant to bind to a plant cyclin-dependent protein kinase or a plant cyclin to inhibit development of a differentiated tissue in the plant.
2. (previously presented) The method of claim 1, wherein the nucleic acid encoding the cyclin-dependent kinase inhibitor is homologous to ICK1.
3. (previously presented) The method of claim 1, wherein the nucleic acid encoding the cyclin-dependent kinase inhibitor is ICK1.
4. (cancelled)
5. (previously presented) The method of claim 1, wherein the cyclin-dependent kinase inhibitor polypeptide is ICK1.
6. (original) The method of claim 1, wherein the plant is a member of the *Cruciferae* family.
7. (original) The method of claim 1, wherein the plant is a member of the *Brassica* genus.

TMI/nf 12/12/05 462099.doc 81601-16  
PATENT

Attorney Reference Number 4810-56910-01  
Application Number 09/733,507

8. (original) The method of claim 1, wherein the nucleic acid encoding the cyclin-dependent kinase inhibitor polypeptide is operably linked to a constitutive promoter.
9. (original) The method of claim 1, wherein the nucleic acid encoding the cyclin-dependent kinase inhibitor polypeptide is operably linked to a tissue-specific promoter.
10. (cancelled).
11. (original) The method of claim 9, wherein the tissue-specific promoter is the AP3 promoter.
12. (original) The method of claim 9, wherein the tissue-specific promoter mediates expression of the nucleic acid encoding the cyclin-dependent kinase inhibitor polypeptide in petal or stamen primordia.
13. (previously presented) The method of claim 1 wherein modifying development of the plant makes the plant male sterile.
14. (original) The method of claim 1 wherein the development of the tissue in the plant is modified so that petals on the transformed plant are altered or absent.
15. – 27. (cancelled)
28. (currently amended) The method of claim 1, wherein the nucleic acid encoding the cyclin-dependent kinase inhibitor comprises:
- ~~a nucleic acid sequence as set forth in SEQ ID NO: 1;~~
  - ~~a nucleic acid sequence as set forth in SEQ ID NO: 3; or~~
  - a nucleic acid sequence having at least 95% sequence identity with a nucleic acid sequence set forth in SEQ ID NO: 1 or SEQ ID NO: 3.

TMH/nf 12/12/05 462099.doc 81601-16  
PATENT

Attorney Reference Number 4810-56910-01  
Application Number 09/733,507

29. (previously presented) The method of claim 1, wherein the nucleic acid encoding the cyclin-dependent kinase inhibitor comprises a nucleic acid sequence as set forth in SEQ ID NO: 1 or 3.

30. (cancelled)

31. (currently amended) ~~The A method of modifying floral development of a plant~~  
~~comprising:~~  
~~transforming a plant cell with a nucleic acid encoding an *Arabidopsis* cyclin-dependent kinase inhibitor polypeptide wherein the *Arabidopsis* cyclin-dependent kinase inhibitor polypeptide is encoded by a nucleic acid comprising:~~  
~~a nucleic acid sequence as set forth in SEQ ID NO: 1;~~  
~~a nucleic acid sequence as set forth in SEQ ID NO: 3; or~~  
~~a nucleic acid sequence having at least 95% sequence identity with a nucleic acid sequence set forth in SEQ ID NO: 1 or SEQ ID NO: 3 to produce a transformed plant cell; and~~  
~~growing the transformed plant cell or progeny of the transformed plant cell to produce a transformed plant,~~  
~~wherein the plant cyclin-dependent kinase inhibitor polypeptide is expressed in petal or stamen primordia of the transformed plant to inhibit floral development.~~

32. (cancelled)

33. (previously presented) ~~The A method of modifying development of a plant,~~  
~~comprising: claim 32~~  
~~transforming a plant cell with a nucleic acid encoding an *Arabidopsis* cyclin-dependent kinase inhibitor polypeptide, wherein the *Arabidopsis* cyclin-dependent kinase inhibitor polypeptide is encoded by a nucleic acid comprising:~~  
~~a nucleic acid sequence as set forth in SEQ ID NO: 1;~~  
~~a nucleic acid sequence as set forth in SEQ ID NO: 3; or~~

TMI/vnf 12/12/05 462099.doc 81601-16  
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Application Number 09/733,507

a nucleic acid sequence having at least 95% sequence identity with a nucleic acid sequence set forth in SEQ ID NO: 1 or SEQ ID NO: 3 and  
growing the transformed plant cell or progeny of the transformed plant cell to produce a transformed plant,  
wherein expression of the plant cyclin-dependent kinase inhibitor polypeptide decreases ploidy of a differentiated tissue in the plant.

34. – 44. (cancelled)

45. (previously presented) A method of modifying development of a plant, comprising:  
transforming a plant cell with a nucleic acid encoding ICK1 to produce a transformed plant cell; and  
growing the transformed plant cell or progeny of the transformed plant cell to produce a transformed plant,  
wherein (a) the ICK1 is expressed in petal and/or stamen primordia of the transformed plant, and the modified development of the plant comprises inhibition of floral development; or (b) the ICK1 is expressed in leaf cells of the transformed plant, and the modified development of the plant comprises a decrease in ploidy.

46. (cancelled)